IN THE CLAIMS:

Claims 1-16. (Cancelled)

17. (Currently Amended) A system for interfacing a communication signal with a three phase electrical power network ~~in a building~~ having at least one service panel, said system comprising:

a carrier current device located at a first position and providing a power line carrier signal; and

a passive coupling device adapted to be connected to one of said at least one service panel for coupling said power line carrier signal to each phase of ~~said~~ a three phase power distribution network of said building, wherein said three phase power distribution network is a Delta-connected three phase power distribution network;

and wherein said passive coupler device includes a transformer device providing a signal voltage differential across all pairs of combinations of said three phases wherein a number of turns into output phase winding of said transformer are adjusted as a function of a number of turns in the primary winding of said transformer in order to substantially equalize signal coupling effectiveness between said primary winding and each of said pairs.

18. (Original) The system according to claim 17, wherein said one service panel is a service panel which is the most electrically centrally located service panel ~~in said~~ located in a building.

19. (Original) The system according to claim 17, wherein said passive coupling is adapted to be coupled to a high voltage distribution system having a voltage of at least 277 volts.

20. (Currently Amended) ~~The system according to claim 17, wherein said passive coupler device includes a transformer device providing a signal voltage differential across all pairs of combinations of said three phases wherein a number of turns into output phase winding of said transformer are adjusted as a function of a number of turns in the primary winding of said transformer in order to substantially equalize signal couplings effectiveness between said primary winding and each of said pairs.~~ The system according to claim 17, wherein the three phase electrical power network is located in a building.

Claims 21-22. (Cancelled)

23. (Currently Amended) ~~A system for modifying a power distribution network to provide data communications, comprising:~~

~~a source of data communication located at a first position and outputting a power line carrier signal;~~

~~a passive coupler directly connected to a service location of said a power distribution network for receiving said power line carrier signal and distributing said data on said power line distribution network;~~

~~wherein said service location is remote from said first location and wherein said power line distribution network is a Delta connected power three phase power distribution network.~~ The system according to claim 17, wherein the service panel is remote from the first location.

24. (Currently Amended) The system according to claim 23, ~~wherein said passive coupling device passively couples said power line carrier signal to each of three phases of said power distribution system.~~ wherein the three phase electrical power network is located in a building.

25. (Original) The system according to claim 23, wherein said power distribution network includes at least two service locations wherein said service location directly connected to said passive coupler is the most centrally located of said at least two service locations with respect to the length of electrically wiring in said distribution network.

Claims 26-30. (Cancelled)

31. (New) A coupling system for enabling the efficient communication between a first communication device and communication system embedded in a low-voltage power distribution system, the coupling system comprising:

an electronic network that includes one or more reactive devices configured to provide an electrical interface between the first communication device emitting broadband local area network (LAN) communication signals and a respective power wire of the low-voltage power distribution system such that the electronic network provides a differential communication signal across all pairs of the power distribution system;

wherein power distribution system is a three-phase delta-configured network having three phases A, B and C corresponding to a respective power wire of the power distribution system.

32. (New) The coupling system of claim 31, wherein the first communication device is a gateway, and wherein the first communication device supports a hub-and-spoke LAN architecture for remote communications devices coupled to the power communications network.

33. (New) The coupling system of claim 32, wherein the electronic network includes a transformer having a primary side and a secondary side;

wherein the primary side is coupled to the first communication device; and

wherein the secondary side has a first wire, a center-tap wire and a third wire with the first wire couple to phase A, the center-tap wire couple to phase B and the third wire couple to phase C of the power distribution system.

34. (New) The coupling system of claim 33, wherein the transformer is a balun transformer.

35. (New) The coupling system of claim 33, wherein the transformer's windings are adjusted in order to substantially equalize signal coupling distribution between phase A and phase B, phase B and phase C and phase A and phase C.

36. (New) The coupling system of claim 35, wherein the power distribution system further includes a separate capacitor placed between each wire of the secondary side and its respective phase in the power distribution system.

37. (New) The coupling system of claim 36, wherein the power distribution system further includes a fuse placed between each wire of the secondary side and its respective phase in the power distribution system.

38. (New) The coupling system of claim 35, wherein the power distribution system further includes a fuse placed between each wire of the secondary side and its respective phase in the power distribution system.

39. (New) The coupling system of claim 31, wherein the power distribution system uses a power signal having a voltage magnitude about or below 277 RMS volts.

40. (New) The coupling system of claim 31, wherein the power distribution system uses a power signal having a voltage magnitude below 277 RMS volts.

41. (New) The coupling system of claim 39, wherein the electronic network provides its interface at or near a first service panel.

42. (New) The coupling system of claim 31, wherein the electronic network provides its interface at or near a first service panel.

43. (New) The coupling system of claim 42, wherein service panel is an electrically central location with respect to the power distribution system.

44. (New) The system according to claim 31, wherein the first communication device is a gateway.

45. (New) The system according to claim 44, wherein the first communication device is a gateway forming part of a hub-and-spoke network topology.

46. (New) The system according to claim 42, wherein the power network includes a plurality of service panels, and the first service panel is the most electrically centrally located of the service panels.

47. (New) A local area network (LAN) communications system providing broadband communications over a power-line communication system embedded on a power distribution system, the communications system comprising:

a first communication device configured to emit broadband LAN signals and to act as a hub in a hub-and-spoke communications system when used with other devices coupled to the power distribution system, wherein the power distribution system is a delta-configured three-phase network having three phases A, B and C corresponding to a respective power wire; and

a coupling means for receiving a common broadband LAN communication signal from the first communication device and, using the received common communications signal, producing a differential broadband LAN communication signal across each phase pair of the power distribution system.

48. (New) A method for introducing local area network (LAN) communication signals into a low-voltage power distribution system, comprising the steps of;

generating a local area network (LAN) communication signal at a first location to create a generated communications signal; and

passively coupling the generated communication signal to a service location point of the power distribution system, wherein the power distribution system is a low-voltage three-phase delta-configured network having three phases A, B and C corresponding to a respective power wire, and wherein the step of coupling includes creating a differential communication signal across all pairs of the power distribution system based on the generated communications signal.